

# Technologyforecast

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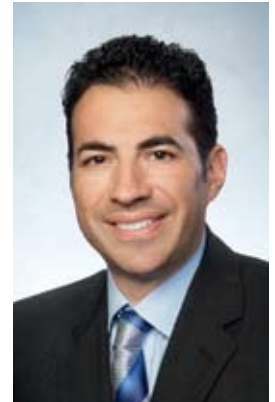
Bringing order  
to chaos

# The dos and don'ts of mashups

John Crupi of JackBe clarifies what enterprise mashups are capable of, what they aren't, and where their power lies.

Interview conducted by Vinod Baya, Alan Morrison and Bo Parker

John Crupi joined JackBe in April 2006 and brought Deepak Alur and Dan Malks with him from Sun Microsystems, where Crupi had been chief technical officer of the Enterprise Web Services Global Practice. Together, Crupi's team has helped JackBe develop a mashup platform called Presto that includes the governance, security, and user interface capabilities necessary for the enterprise. In the process, Crupi has discovered quite a bit about how a mashup ecosystem might function, as well as how the development role of business units is expanding.



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**PwC:** How did JackBe get started?

**JC:** JackBe started in 2001 as a technology company trying to enable call centers to make orders online using the browser. IE [Internet Explorer] back in the late '90s would allow asynchronous communications, which has now become AJAX [asynchronous JavaScript and XML]. Because of that, they could offer specialized applications that were very interactive, but only in IE at the time. They were able to solve a lot of the business problems call centers had getting a Web browser to behave more interactively.

This thing was so popular and so powerful, that they decided to sell off the company and actually take the technology and build a company based on that. That technology is called AJAX and is now ubiquitous in the browsers, but really, it was more or less the starting point. JackBe made the transition from an AJAX company to an enterprise mashup company in late 2005.

**PwC:** We've seen the term enterprise mashup for a couple of years now. How has the concept evolved during that time?

**JC:** If you think about a mashup as combining data or taking data from disparate sources and putting it together in a way that you can use it and interact with it in various different forms, that really sounds like what we do every day in Excel by copying and pasting and then manipulating it and running formulas and macros on it and maybe showing graphs. But what we do in the enterprise with cut and paste in Excel wastes a ridiculous amount of time.

The way we collaborate with that end product is that we e-mail a spreadsheet. So if you think about it, the Excel sheet might serve just one campus or destination. But if you automate or allow users to integrate and mash it up themselves and feed it into Excel or feed it to a portal or feed it to a Web app running on iPhone, then the enterprise really starts getting excited because they have been trying to do this for years. IT is just way overburdened to do that.

PwC: You're describing a single, online, persistent version of a macro that everybody has access to. So are we avoiding the problem of spreadsheet hell by making it persistent online and avoiding the version problem, or is there still going to be some of this aspect of a lack of control?

JC: If you talk about governance and you say, "We don't have governance; we don't know how to govern something," basically that's a showstopper: IT can stop any type of deployment or any type of application. They say we don't have governance in place to do that.

But then you say, "Well, wait a second; I see that I have 5,000 spreadsheets that are going throughout my organization every day; how is that governed?" IT doesn't govern that, and that's true, right? It's completely ungoverned. So in some sense, by introducing mashups and providing automatic connectivity into Excel as a point of destination, you actually have more governance around the data, because it's almost as though you are controlling the data that they can get out into the spreadsheet. And not only that: you are also able to push it out.

So if I have data in my worksheet and I select an area that can be data—a data service that's pushed out—then I can attach its entitlements to that, so that others in my group can have access to that information. You actually get around sending spreadsheets for people to just view it or look at separate cells. Now you can start treating spreadsheets as a service because of enterprise mashups.

PwC: Are you envisioning that you would see a mashup capability in portals—or in a software as a service platform?

JC: If you think about it, in the last 10 years, not a lot of innovation has happened on the user side, especially in terms of UI [user interface]. The innovations were in the browser or desktop application. So what we found was that this ecosystem of many UIs was already formed and that organizations didn't want to be forced into one destination to see these mashups. So, we completely pulled out of providing a tool kit of our own. Instead, we are looking at existing front ends as a publishing destination.

We have a concept called Mashlets, which is our terminology for an enterprise widget or a mashup widget. It's a wrapper and it's a black box around whatever mashup I create. I can put a face on a mashup via a Mashlet, and I can publish that Mashlet to my portal as a portlet; I can publish it to a Web page; I can publish it to my iPhone and just consume it as a Web page; or I can push it into some of the next-generation portals like Netvibes and Pageflakes.

This is the trend that's happening; I want mashups to be small pieces of data integration, but I also want to be able to push that data wherever I want to.

PwC: Are you making Mashlets available to Web developers rather than end users?

JC: No, actually it's to the end user. A Mashlet is an autogenerated UI. A mashup in the enterprise is data that's been integrated or combined; whether it's merged or joined or filtered, it's just data. We could get that data to the browser or to the spreadsheet. It's just data. We can put all different types of faces on it, and that's what we give the user.

People are kind of sick and tired of hearing about SOA [service-oriented architecture] when it comes to the business unit because they have been hearing about this for five years or so. It's going to be agile; it's going to give you your ROI [return on investment]; and so on. Well, in our experience, business units don't see that SOA has really brought them too much. As a matter of fact, business isn't even asking for SOA. But why are they asking for mashups? Because they see mashups as a way to get data integrated, whether they do it themselves, or they use a tool, or they have an analyst do it for them. Ultimately, it's getting closer to them. This is a nonthreatening way for them to talk about what SOA should have given them before. So, we put a face on the SOA with mashups, and you can show them the mashup very quickly, and if in fact that mashup is incorrect, or is not visualized correctly, or doesn't have all the data they want, they can see that quickly. They could see it in a matter of hours versus months or weeks. So mashups are SOA for the ultimate end user.

PwC: It sounds like there is a very strong connection between user spreadsheets and mashups. Both tend to take data from sources, combine it, and analyze it, but then use it for reporting or charting, not to collect new data. Is that a fair way of thinking about it?

JC: That has been the way that we've been used to doing things. And it's been part of the problem, if you look at the BI [business intelligence] tools. A lot of them—once you get all the data models and analytics done—are fancy reporting engines. End users are used to doing creative, customized reports, but the reports are relatively dead; you can't do much with it other than look at it and print it. The same thing with Excel. It turns out that Excel is a great place; it's almost an enterprise canvas for enterprise users to take data and put it somewhere so that as soon as they get it, they can put it there, and they can do something with it and integrate it. And we know that users want to get at more and more data faster and faster, so it's kind of a hybrid model.

You have a core piece of data you are always getting, but the real need is to connect it to other data, whether it's siloed internally, maybe in an SAP system and in PeopleSoft where the systems won't talk together. So you have pull it out to different UIs or external data. You want to be able to integrate or combine that data and see it in a much faster, dynamic way that doesn't require you to go to an IT and be put on a wait list for a year or two.

PwC: One of the things about consumer mashups is that they have a wisdom-of-crowds quality about them. The crowd—with the help of search engine algorithms or recommendation systems—acts as a filter to surface mashups like the original [chicagocrime.org](http://chicagocrime.org), for instance. Now millions of people have heard about it. An enterprise tends to cover a smaller area. Do enterprises have the scale to mimic mass filtering?

JC: That's a great question. The good news about being a startup or at least solving problems in an emerging space is that you start hearing people's horror stories and dirt about what they have been doing in the past to solve problems or do workarounds. And one of the things we hear all the time is that a given company spent a ridiculous amount of time filtering through log files just to find out what its users are doing and then starting to invest in semantic analysis engines, ontologies, taxonomies, and all these tagging things that are looking at unstructured data. It would just be too hard to build an infrastructure to support that.

Now, what enterprise mashups give you—and what JackBe's mashup platform supports—is a two-step process. We know that IT has to govern all the services that are being consumed. So all the services that will be mashed up or exposed to the user or the business are actually registered or, as we say, virtualized first in the system. Whether it's a database, a WSDL [Web Services Description Language] SOA service or REST [representational state transfer service], it actually gets

registered with our mashup server. Then it becomes exposed for mashups. Because we act as an intermediary and all data is flowing between our mashup server and the service—which may be internal or external—we know what services are being used; we allow users to tag any service they are consuming, and they can apply tags to any mashup you create. You can rate services; you can rate mashups; you can do all these sorts of things and put and attach metadata to the services you are consuming and the mashups that you are creating. And we push it all out in what we call the mashup hub. Also, instead of connecting into people, people connecting to people, we drive the interest and have interest-driven networks, so that when people are potentially consuming a mashup or creating a mashup, then this may be around an area of interest. That's how we start to create these informal or organic networks. If I could see mashups that were around my area of research and I wanted to attach myself to a network that exists, that is a whole bunch of people. I don't really care too much about the people; I care about the artifacts and the systems, the things that they are mashing up. That is the more natural fit, we think, than just doing tagging and ad hoc searches.

PwC: Would you say that mashups that bring together structured and unstructured data will be more successful than mashups that rely primarily on structured transactional data?

JC: Yes, because users have a continually growing need to get at data, and much of that data is very unstructured, and a lot of it has to do with the way that data is created. We have a multitiered process. If we create mashups that are consuming unstructured data and providing more structure to it, that itself can be tagged by the user. So by adding more structure to that data so it can be consumed, we are not only betting on the fact that systems will be making data more and more structured, but in fact, users will participate in adding structure to this information. I think the unstructured side will exceed the transactional side of data integration.

PwC: Do your developer communities still consist primarily of people from the chief information officer's organization? They may be linked in to business units, but they are basically people who know what XML [extensible markup language] is. Or are you seeing people who would be thinking, "I can do this with Excel, or I can do this with mashups; which one do I want to use?"

JC: We do have to go through IT in many instances, but we are also noticing that the business is getting much more savvy in funding development themselves.

They don't go to IT and say, "Build the systems for me." They really go to IT to say, "We need the systems, and we need access to these services, and provision me some boxes. I will fund the developers or I have my own developers that are going to build this. But ultimately, I need this built for my business."

PwC: So are mashups defining a boundary line that allows safe things to happen without having to use internal IT resources?

JC: That's really the big trend here. Not only are the business units trying to get things done; they are trying to look for new revenue opportunities. Mashups also create new revenue opportunities, because now you can get data out in ways you weren't able to before—not big pieces of the information in terms of large apps, but data. We get a lot of customers asking if we can mash up a million records. We say you would never want to mash up a million records. Mashups are intended to get to the user. You have access to your database, which knows how to manage a million records; the mashup addresses the small subset of records that you need to get to the user. This little pocket is being built and funded by the business. It looks like software as a service, but it's internal. The business usually has developers who do nothing but create wrappers and service interfaces to these siloed systems. Then the business starts building these applications on top. So this is the trend; that's what's starting to happen. ■